DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
OFFICE ENGINEER
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October 25, 2013

12-Ora-55-17.0/17.7
12-0H2084
Project ID 1200000188
ACNH-P055(053)E

Addendum No. 2

Dear Contractor:

This addendum is being issued to the contract for CONSTRUCTION ON STATE HIGHWAY IN ORANGE COUNTY IN ANAHEIM ON ROUTE 55 AT SANTIAGO BOULEVARD AND NOHL CANYON ROAD.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on November 7, 2013.

This addendum is being issued to revise the Project Plans, the Notice to Bidders and Special Provisions, the Bid book and the Federal Minimum Wages with Modification Number 15 dated 10/04/2013 .

Project Plan Sheets 4, 7, 19, 20, and 21 are revised. Copies of the revised sheetsare attached for substitution for the like-numbered sheets.

Project Plan Sheet 5A is added. A copy of the added sheet is attached for addition to the project plans.

In the Notice to Bidders, the eleventh paragraph is revised as follows:

"Complete the work, including plant establishment work, within 450 working days."

In the Special Provisions, Section 4, "BEGINNING OF WORK, TIME OF COMPLETION, AND LIQUIDATED DAMAGES," is replaced as attached.

In the Special Provisions, Section 5-1.10, "PAYMENTS," "Item A," is replaced as follows:

"A. Slotted Plastic Pipe Horizontal Drain."

In the Special Provisions, Section 10-1.01, "ORDER OF WORK," is replaced as attached.

In the Special Provisions, Section 10-1.04, "TEMPORARY HYDRAULIC MULCH," the Section "CONSTRUCTION," is replaced as attached.

In the Special Provisions, Section 10-1.20, "EARTHWORK," the following two paragraphs are added at the end of Section:

"During grading operations, any placement of fill material shall be performed under the direct observation of a representative from Office of Geotechnical Design South (OGD) and/or a representative of the Engineer."

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"Full compensation for locating and protecting the monitoring instruments and for locating and protecting the concrete walers and soil anchors and tiebacks shall be considered as included in the contract price paid per cubic yard for roadway excavation and no additional compensation will be allowed therefore."

In the Special Provisions, Section 10-1.25, "HORIZONTAL DRAIN," the following paragraph is added after the second paragraph:

"Plastic pipe horizontal drains shall not be corrugated pipe."

In the Special Provisions, Section 10-2, "HIGHWAY PLANTING AND IRRIGATION SYSTEMS," is replaced as attached.

In the Bid book, in the "Bid Item List," Items 19, 21, 32, 36, and 40 are revised as attached.

To Bid book holders:

Replace the entire pages 3 and 4 of the "Bid Item List" in the Bid book with the attached revised pages 3 and 4 of the Bid Item List. The revised Bid Item List is to be used in the bid.

Inquiries or questions in regard to this addendum must be communicated as a bidder inquiry and must be made as noted in the Notice to Bidders section of the Notice to Bidders and Special Provisions.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the Bid book.

Submit bids in the Bid book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

This addendum, attachments and the modified wage rates are available for the Contractors' download on the Web site:

http://www.dot.ca.gov/hq/esc/oe/project_ads_addenda/12/12-0H2084

If you are not a Bid book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,

A. Mehrshahi

for REBECCA D. HARNAGEL
Chief, Office of Plans, Specifications & Estimates
Office Engineer
Division of Engineering Services

Attachments

SECTION 4. BEGINNING OF WORK, TIME OF COMPLETION, AND LIQUIDATED DAMAGES

Complete the work, except plant establishment work, within 200 working days, starting on the 15 day after contract approval or on the day you start work at the job site, whichever occurs first.

Complete the work, including plant establishment work, within 450 working days starting on the 15th day after contract approval or on the day you start work at the job site, whichever occurs first.

10-1.01 ORDER OF WORK

Order of work shall conform to the provisions in Section 5-1.05, "Order of Work," of the Standard Specifications and these special provisions.

Construction related traffic impacts to local residential streets shall be minimized. Access to Maple Tree Drive, Nohl Canyon Road, and adjacent residential streets shall be restricted to light duty vehicles such as water trucks, dump trucks, cement trucks and pickup trucks used in construction of curb, gutter, sidewalk and driveway; removal of trees and parkway improvements; and construction of steel tube fence and gate, as well as water trucks for dust abatement on the slope. Contractor shall ensure that construction vehicles and equipment for all other operations including but not limited to grading and earth-moving operations shall access the job site solely from Santiago Boulevard and the Maintenance Access Road.

Parking for vehicles associated with the construction of the project such as private or commercial vehicles or construction equipment, on Maple Tree Drive, Nohl Canyon Road, and adjacent residential streets shall be prohibited between the hours of 9:00 p.m. and 5:00 a.m.

The Contractor shall notify the Engineer 10 days prior to commencement of any construction activities during nesting season (February 15- September 1). The District Biologist will perform a preconstruction survey prior to any construction activities

No work shall take place on the parcel located at 3971 E Maple Tree Drive, until May 6, 2014, unless the Engineer approves an earlier date.

During the progress of the work under this Contract, work under the following contract will be in progress at or near the job site of this Contract:

Demolition of house at 3971 E Maple Tree Drive, Anaheim:
Demolition Contractor: Vizion's West, Inc.
Attn: Lloyd R. Earleywine – CEO/President
P.O. BOX 988
Winchester, CA 92596
(951) 244-3050

CONSTRUCTION

Application

Dilute hydraulic mulch with water to spread the mulch evenly.
Use hydroseeding equipment to apply hydraulic mulch.
Apply hydraulic mulch:

1. At the application rate shown. Successive applications or passes may be needed to achieve the required rate:

Material	Application Rate lbs/acre
Wood fiber	2500 lbs/acre
Cellulose fiber	
Alternate fiber	

2. To form a continuous mat with no gaps between the mat and the soil surface.
3. From 2 or more directions to achieve a continuous mat.
4. In layers to avoid slumping and to aid drying.
5. During dry weather or at least 24 hours before predicted rain.

SECTION 10-2 HIGHWAY PLANTING AND IRRIGATION SYSTEMS

10-2.01 GENERAL

The work performed in connection with highway planting and irrigation systems shall conform to the provisions in Section 20, "Erosion Control and Highway Planting," of the Standard Specifications and these special provisions.

When fluctuations of water pressure and water supply are encountered during normal working hours, plants shall be watered at other times, as often, and in sufficient amounts as conditions may require to keep the soil and plant roots moist during the life of the contract.

Full compensation for watering plants outside normal working hours shall be considered as included in the contract lump sum prices paid for highway planting and plant establishment work and no additional compensation will be allowed therefor.

PROGRESS INSPECTIONS

Progress inspections will be performed by the Engineer for completed highway planting and irrigation system work at designated stages during the life of the contract.

Progress inspections will not relieve the Contractor of responsibility for installation in conformance with the special provisions, plans and Standard Specifications. Work within an area shall not progress beyond each stage until the inspection has been completed, corrective work has been performed, and the work is approved, unless otherwise permitted by the Engineer.

The requirements for progress inspections will not preclude additional inspections of work by the Engineer at other times during the life of the contract.

The Contractor shall notify the Engineer, in writing, at least 4 working days prior to completion of the work for each stage of an area and shall allow a minimum of 3 working days for the inspection.

Progress inspections will be performed at the following stages of work:

A. During pressure testing of the pipelines on the supply side of control valves.
B. During testing of low voltage conductors.
C. Before planting begins and after completion of the work specified for planting in Section 20-4.03, "Preparing Planting Areas," of the Standard Specifications.
D. Before plant establishment work begins and after completion of the work specified for planting in Section 20-4.05, "Planting," of the Standard Specifications.
E. At intervals of one month during the plant establishment period.

COST BREAK-DOWN

The Contractor shall furnish the Engineer a cost break-down for the contract lump sum items of highway planting and irrigation system. Cost break-down tables shall be submitted to the Engineer for approval within 15 working days after the contract has been approved. Cost break-down tables will be approved, in writing, by the Engineer before any partial payment will be made for the applicable items of highway planting and irrigation system involved.

The sum of the amounts for the line items of work listed in each cost break-down table for highway planting and for irrigation system work shall be equal to the contract lump sum price bid for Highway Planting and Irrigation System, respectively. Overhead and profit, except for time-related overhead, shall be included in each individual line item of work listed in a cost break-down table.

No adjustment in compensation will be made in the contract lump sum prices paid for highway planting and irrigation system due to differences between the quantities shown in the cost break-downs furnished by the Contractor and the quantities required to complete the work as shown on the plans and as specified in these special provisions.

Individual line item values in the approved cost break-down tables will be used to determine partial payments during the progress of the work and as the basis for calculating an adjustment in compensation for the contract lump sum items of highway planting and irrigation system due to changes in line items of work ordered by the Engineer. When the total of ordered changes to line items of work increases or decreases the lump sum price bid for either Highway Planting or Irrigation System by more than 25 percent, the adjustment in compensation for the applicable lump sum item will be determined in the same manner specified for increases and decreases in the total pay quantity of an item of work in Section 4-1.03B, "Increased or Decreased Quantities," of the Standard Specifications.

HIGHWAY PLANTING COST BREAK-DOWN

Contract No. 0H2084

UNIT DESCRIPTION	UNIT	APPROXIMATE QUANTITY	VALUE	AMOUNT
Plant Group A	EA	262		
Plant Group B	EA	84		
Plant Group F	EA	7051		
Mulch	CY	400		

TOTAL _____

IRRIGATION SYSTEM COST BREAK-DOWN

Contract No. 0H2084

UNIT DESCRIPTION	UNIT	APPROXIMATE QUANTITY	VALUE	AMOUNT
Control and Neutral Conductors	LS	1		
1" Electric Remote Control Valve	EA	38		
42 Station Irrigation Controller (Wall Mounted)	EA	1		
2" Flow Sensor	EA	1		
1" Plastic Pipe (SCH 40 UVR-PVC)	LF	9350		
1 1/4" Plastic Pipe (SCH 40 UVR-PVC)	LF	2085		
1 1/2" Plastic Pipe (SCH 40 UVR-PVC)	LF	4710		
2" Plastic Pipe (Class 315 Supply Line)	LF	1900		
1/2 "Plastic Pipe (Irrigation Line) (24" OC)	LF	4800		
Irrigation Controller Enclosure Cabinet	EA	1		
Backflow Preventer Assembly Enclosure	EA	1		
2" Backflow Preventer Assembly	EA	1		
Sprinkler (Type B-5)	EA	561		
2" Gate Valve	EA	1		
2" Ball Valve	EA	5		
1"Combination Air Release Valve	EA	3		

TOTAL _____

10-2.02 EXISTING HIGHWAY PLANTING

In addition to the provisions in Section 20, "Erosion Control and Highway Planting," of the Standard Specifications, work performed in connection with existing highway planting shall conform to the provisions in "Existing Highway Facilities," of these special provisions.

10-2.03 EXISTING HIGHWAY IRRIGATION FACILITIES

The work performed in connection with the various existing highway irrigation system facilities shall conform to the provisions in "Existing Highway Facilities," of these special provisions.

Water shall be maintained in conformance with the provisions in Section 20-5.025, "Maintain Existing Water Supply," of the Standard Specifications.

10-2.04 HIGHWAY PLANTING

The work performed in connection with highway planting shall conform to the provisions in Section 20-4, "Highway Planting," of the Standard Specifications and these special provisions.

HIGHWAY PLANTING MATERIALS

MATERIALS

Mulch

Mulch must be green material and must comply with the following:

1. The mulch provider must be a compost producer and a participant in the United States Composting Council (USCC) Seal of Testing Assurance (STA) program.
2. The green material producer must be fully permitted as a compost producer in accordance with requirements of the California Department of Resources Recycling and Recovery, Local Enforcement Agencies (LEA) and any other State and Local Agencies that regulate solid waste facilities. If exempt from State permitting requirements, the composting facility must certify that it follows all guidelines and procedures for production of compost meeting the environmental health standards of Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7.
3. Green material may be derived from any single or mixture of chipped, shredded, or ground vegetation; or clean processed recycled wood products.
4. Compost green materials such that weed seeds, pathogens and deleterious materials are reduced as specified under Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7, Section 17868.3.
5. Green material must not contain paint, petroleum products, herbicides, fungicides or other chemical residues harmful to animal life or plant growth. Compost must possess no objectionable odors.
6. Metal concentrations in green material must not exceed the maximum metal concentrations listed in Title 14, California Code of Regulations, Division 7, Chapter 3.1, Section 17868.2.
7. Green material must comply with the following table:

Physical and Chemical Requirements		
Property	Test Method	Requirement
pH	TMECC 04.11-A Elastometric pH 1:5 Slurry Method pH Units	6.0–8.5
Soluble Salts	TMECC 04.10-A Electrical Conductivity 1:5 Slurry Method dS/m (mmhos/cm)	0–10.0
Moisture Content	TMECC 03.09-A Total Solids & Moisture at 70+/- 5 deg C % Wet Weight Basis	N/A
Organic Matter Content	TMECC 05.07-A Loss-On-Ignition Organic Matter Method (LOI) % Dry Weight Basis	30–100
Maturity	TMECC 05.05-A Germination and Vigor Seed Emergence Seedling Vigor % Relative to Positive Control	 N/A N/A

Stability	TMECC 05.08-B Carbon Dioxide Evolution Rate mg CO_2-C/g OM per day	N/A
Particle Size	TMECC 02.02-B Sample Sieving for Aggregate Size Classification % Dry Weight Basis	Inches % Passing 3 99% 3/8 < 25% Max. Length 4 inches
Pathogen	TMECC 07.01-B Fecal Coliform Bacteria < 1000 MPN/gram dry wt.	Pass
Pathogen	TMECC 07.01-B Salmonella < 3 MPN/4 grams dry wt.	Pass
Physical Contaminants	TMECC 02.02-C Man Made Inert Removal and Classification: Plastic, Glass and Metal % > 4mm fraction	Combined Total: < 1.0
Physical Contaminants	TMECC 02.02-C Man Made Inert Removal and Classification: Sharps (Sewing needles, straight pins and hypodermic needles) % > 4mm fraction	None Detected

NOTE: TMECC refers to "Test Methods for the Examination of Composting and Compost," published by the United States Department of Agriculture and the United States Compost Council (USCC).

8. Before mulch application, submit a copy of the green material producer's Compost Technical Data Sheet and a copy of the compost producers STA certification. The Compost Technical Data Sheet must include laboratory analytical test results, directions for product use, and a list of product ingredients.
9. Before mulch application, submit a Certificate of Compliance under Section 6-1.07, "Certificates of Compliance," of the Standard Specifications.

Mulch must be shredded bark.
Mulch must be wood chips. Wood chips produced from tree trimmings may contain leaves and small twigs.

MEASUREMENT AND PAYMENT

GRAVEL (MISCELLANEOUS AREAS)

GENERAL

Summary

This work consists of installing gravel in miscellaneous areas outside the traveled way.

Submittals

Submit the following items for approval:

1. Product Data: A copy of the manufacturer's product sheet together with instructions for installation of filter fabric 5 days before installation.
2. Certificate of Compliance for the filter fabric under Section 6-1.07, "Certificates of Compliance," of the Standard Specifications.
3. Samples: Submit a 5 pound sample of gravel for approval before delivery of materials to the site.

MATERIALS

Edging

Edging must be commercial quality, made of aluminum, and have an L-shape design. Edging must be a minimum 4 inches in height. Thickness must be as recommended by the manufacturer for commercial installation of the use intended. Edging must be anchored with steel spikes or stakes, whichever is provided by the manufacturer of the edging. Spike or stake size and spacing must be according to the manufacturer's recommendations for use and site conditions.

Filter Fabric

Filter fabric must be Class A as specified in Section 88-1.02, "Filtration," of the Standard Specifications.

Staples

Staples for filter fabric must be 2 inches in width, 6 inches in length and 11-gauge wire.

Gravel

Gravel must consist of crushed rock and must comply with the following:

Grading Requirements

Sieve Size	Percent Passing
1-1/4 inch	100
3/4 inch	60-80
1/2 inch	45-65
No. 40	5-20

The color of gravel must be gray.

CONSTRUCTION

Clearing

Prior to beginning gravel work, areas to receive the gravel shall be cleared in conformance with the provisions in "Roadside Clearing" of these special provisions.

Edging Installation

Install edging to delineate the limits of the gravel areas. Edging will not be required between gravel areas and the adjacent face of soundwalls, pavement edges, curbs, dikes or rock blanket areas.

Filter Fabric Installation

Surfaces to receive filter fabric, immediately prior to placing, shall be free of loose or extraneous material and sharp objects that may damage the filter fabric during installation.

The fabric shall be aligned and placed in a wrinkle-free manner.

Adjacent rolls of the fabric shall be overlapped from 12 inches to 18 inches. The preceding roll shall overlap the following roll in the direction the material is being spread. Fabric shall be held in place with staples or stakes that are flush with the fabric and prevent movement of fabric during or after placement of gravel.

Should the fabric be damaged during placing, the torn or punctured section shall be either completely replaced or shall be repaired by placing a piece of fabric that is large enough to cover the damaged area and to meet the overlap requirement.

Damage to the fabric resulting from the Contractor's vehicles, equipment or operations shall be replaced or repaired by the Contractor at the Contractor's expense.

Gravel Installation

Do not install gravel work during rainy conditions

Place gravel and compact by rolling. When work is complete, the surface must be smooth, compact, and uniform; maintaining original flow lines, slope gradient and contours of the project site.

MEASUREMENT AND PAYMENT

Gravel (miscellaneous areas) will be measured by the square foot as determined from actual measurements made parallel to the ground slope.

The contract unit price paid per square foot for gravel (miscellaneous areas) includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in installing gravel, complete in place, including site preparation, earthwork,filter fabric, and edging, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

PREPARING PLANTING AREAS

Plants adjacent to drainage ditches shall be located so that after construction of the basins, no portion of the basin walls shall be less than the minimum distance shown on the plans for each plant involved.

PLANTING

Attention is directed to "Irrigation Systems Functional Test" of these special provisions regarding functional tests of the irrigation systems. Do not perform planting in an area until the functional test has been completed for the irrigation system serving that area.

PLANT ESTABLISHMENT WORK

The plant establishment period shall be Type 2 and shall not be less than 250 working days.

If wild flower seeding cannot be performed within the time limits specified under "Wild Flower Seeding" of these special provisions and the Engineer determines that the work except wild flower seeding and plant establishment work has been completed, the Engineer will notify the Contractor in writing of the start of the plant establishment period.

Wild flower seeding not performed prior to the start of the plant establishment period shall be performed during the plant establishment period. The work involved in preparing areas to receive wild flower seeding and applying seed shall be in conformance with the provisions in "Wild Flower Seeding" of these special provisions.

After sowing wild flower seed, plant establishment work for the wild flower seeding areas will not be required except for removing trash and debris and mowing. Mowing shall be performed after the wild flower seeds have set and the wild flowers have begun to die back.

Attention is directed to "Relief From Maintenance and Responsibility" in these special provisions regarding relief from maintenance and protection.

The center to center spacing of replacement plants for unsuitable ground cover plants shall be determined by the number of completed plant establishment working days at the time of replacement and the original spacing in conformance with the following:

ORIGINAL SPACING (Inches)	SPACING OF REPLACEMENT GROUND COVER PLANTS (Inches)		
	Number of Completed Plant Establishment Working Days		
			191-End of Plant Establishment
36			18

During the plant establishment period, the plants shall be watered utilizing the Remote Irrigation Control System (RICS) software program. A watering schedule shall be submitted to the Engineer for use during the plant establishment period.

Weeds within plant basins, including basin walls and ground cover, shall be controlled by hand pulling.

Weeds within mulched and ground cover areas and outside of plant basins shall be controlled by killing.

Weeds outside of mulched areas, plant basins, ground cover, the median, and paved areas shall be controlled by mowing. At locations where proposed planting areas are 12 feet or more from the edges of existing plantings to remain and from shoulders, dikes, curbs, sidewalks, fences, and walls, the mowing limit shall be 6 feet beyond the outer limits of the proposed planting area.

Weeds within median areas, pavement, curbs, sidewalk, and other surfaced areas shall be controlled by killing.

Except as specified in these special provisions, disposal of mowed material will not be required unless ordered by the Engineer. Disposal of mowed material, as directed by the Engineer, will be paid for as extra work as provided in Section 4-1.03D,"Extra Work," of the Standard Specifications.

At the option of the Contractor, plants of a larger container size than those originally specified may be used for replacement plants during the first 125 working days of the plant establishment period.

After 125 working days of the plant establishment period have been completed, replacement of plants, except for ground cover plants, shall be one-gallon size for seedlings, pot and liner size plants; 5-gallon size for one-gallon size plants; 15-gallon size for 5-gallon size plants; and other plant replacement plants shall be the same size as originally specified.

Wye strainers shall be cleaned at least 15 days prior to the completion of the plant establishment period.

The final inspection shall be performed in conformance with the provisions in Section 5-1.13, "Final Inspection," of the Standard Specifications and shall be completed a minimum of 20 working days before the estimated completion of the contract.

10-2.05 IRRIGATION SYSTEMS

Irrigation systems shall be furnished and installed in conformance with the provisions in Section 20-5, "Irrigation Systems," of the Standard Specifications, except materials containing asbestos fibers shall not be used.

Method A pressure testing shall conform to the provisions in Section 20-5.03H(1), "Method A", of the Standard Specifications, except leaks that develop in the tested portion of the system shall be located and repaired after each test period when a drop of more than 5 pounds per square inch is indicated by the pressure gage. After the leaks have been repaired, the one hour pressure test shall be repeated and additional repairs made until the drop in pressure is 5 pounds per square inch or less.

VALVE BOXES

Valve boxes shall conform to the provisions in Section 20-2.24, "Valve Boxes," of the Standard Specifications, except as otherwise provided herein.

Valve boxes shall be precast portland cement concrete.

Covers for concrete valve boxes shall be cast iron or steel. Cast iron and steel covers shall be hinged with brass hinge pins for valve boxes containing valves smaller than 2 inches.

Valve boxes shall be identified on the top surface of the covers by labels containing the appropriate abbreviation for the irrigation facility contained in the valve box as shown on the plans. Valve boxes that contain remote control valves shall be identified by the appropriate letters and numbers (controller and station numbers). Labels for valve boxes shall conform to the provisions in Section 20-5.03F, "Valves and Valve Boxes," of the Standard Specifications.

Label material shall be plate plastic .

BALL VALVES

Ball valves shall be furnished and installed as shown on the plans and in conformance with these special provisions.

Ball valves shall be manufactured from Chlorinated Polyvinyl Chloride (CPVC) or polyvinyl chloride (PVC) and shall conform to the following:

Specification	Minimum Requirement
Non-shock cold water working pressure for 3/4-inch to 4-inch valves	235 psi
Non-shock cold water working pressure for 6-inch valves	150 psi
Seats	PTFE (Teflon)
O-Ring Seals	EPDM or Viton

Ball valves shall be of the same size as the pipeline which the valves serve, unless otherwise noted on the plans.

Ball valves shall be installed in a valve box.

GATE VALVES

Gate valves shall be as shown on the plans and in conformance with the provisions in Section 20-2.28, "Gate Valves," of the Standard Specifications and these special provisions.

Gate valves, smaller than 3 inches in size, shall be furnished with a cross-handle.

Gate valves shall have a solid bronze or brass wedge.

ELECTRIC AUTOMATIC IRRIGATION COMPONENTS

The base station for the existing remote controlled irrigation system is located at the Department of Transportation's District Maintenance 691 S. Tustin St.Orange, CA 92866 (714) 288-4099.

Irrigation Controllers

The Remote Irrigation Control System (RICS) irrigation controllers shall be Weathermatic VAC (Valcon Advanced Controller) controllers.

Irrigation controller to include the RICS compatible Weathermatic VAC Solar Controller, Caltrans approved stainless steel enclosure, Master Valve – Pump Start – Flow Sensor Module, Rain sensor, Verizon CDMA wireless Modem (Service provided by Caltrans) and Remote Valve Actuator compatibility. All components are to be factory installed and warranted to a period of 5 years from date of installation.

Arrangements have been made to insure that any successful bidder can obtain the specified equipment listed below from Aqua-Flo Supply, 250 Grand Cypress Ave. Suite 604, Palmdale, CA 93551, phone (661) 273-5820, fax (661) 273-7202.

The prices quoted include delivery. The prices are guaranteed by Aqua-Flo Supply through 12-30-2012. Applicable sales taxes are not included.

The quoted prices and equipment are as follows:

SATELLITE IRRIGATION CONTROLLERS		
Equipment Description	Quantity	Quoted Price/Each
AS12-VAC42-VPSMF-VCDMA-RPC42 *(42 station Assembly)*	1	$15,548.49

Electric Remote Control Valves

Electric remote control valves shall conform to the provisions in Section 20-2.23, "Control Valves," of the Standard Specifications and the following:

A. Valves shall be glass filled nylon or brass construction.
B. Valves shall be angle pattern (bottom inlet) or straight pattern (side inlet) as shown on the plans.
C. Electric remote control valves shall be outfitted with adjustable pressure regulators as shown on the plans. Pressure regulators shall be compatible for use with the electric remote control valves and shall be of the same manufacturer as the electric remote control valves. Pressure regulators shall regulate and maintain the outlet pressure regardless of the incoming pressure. Pressure regulators shall withstand a cold water working pressure of 200 psi. The Contractor shall adjust the pressure regulators to provide proper operation of the irrigation system downstream of the electric remote control valves.
D. Valve solenoids for (solar/battery) controller shall be DC latching and operate on 3.5 V.

Pull Boxes

Pull box installations shall conform to the provisions in Section 20-5.027I, "Conductors, Electrical Conduits and Pull Boxes," of the Standard Specifications.

Conductors

Low voltage, as used in this section "Conductors," shall mean 36 V or less.

Low voltage control and neutral conductors in pull boxes and valve boxes, at irrigation controller terminals, and at splices shall be marked as follows:

A. Conductor terminations and splices shall be marked with adhesive backed paper markers or adhesive cloth wrap-around markers, with clear, heat-shrinkable sleeves sealed over the markers.
B. Non-spliced conductors in pull boxes and valve boxes shall be marked with clip-on, "C" shaped, white extruded polyvinyl chloride sleeves. Marker sleeves shall have black, indented legends of uniform depth with transparent overlays over the legends and "chevron" cuts for alignment of 2 or more sleeves.

Markers for the control conductors shall be identified with the appropriate number or letter designations of irrigation controllers and station numbers. Markers for neutral conductors shall be identified with the appropriate number or letter designations of the irrigation controllers.

The color of low voltage neutral and control conductor insulation, except for the striped portions, shall be homogeneous throughout the entire thickness of the insulation.

Insulation for conductors may be UL listed polyethylene conforming to UL44 test standards with a minimum insulation thickness of 41 mils for wire sizes 10AWG and smaller.

IRRIGATION CONTROLLER ENCLOSURE CABINET

Irrigation controller enclosure cabinets shall be constructed and equipment installed in the cabinets in conformance with the details shown on the plans, the provisions of Section 86-3.04A, "Cabinet Construction," of the Standard Specifications, and these special provisions.

Electric service shall be installed in accordance with "Electric Service (Irrigation)" of these special provisions.

Irrigation controller enclosure cabinets shall be provided with cross ventilation, roof ventilation or a combination of both. The ventilation shall not compromise the weather resistance properties of the irrigation controller enclosure cabinets and shall be fabricated by the manufacturer.

The anchorage arrangement shall be inside the cabinet as shown on the plans. Dimensions of the cabinet shall be suitable for the equipment to be installed as shown on the plans and specified in these special provisions.

Irrigation controller enclosure cabinets shall be fabricated in conformance with the provisions in Section 86-3.04A, "Cabinet Construction," of the Standard Specifications.

Irrigation controller enclosure cabinets shall be fabricated of stainless steel.

Irrigation controller enclosure cabinet doors shall not be furnished with integral door locks. Irrigation controller enclosure cabinet door handles shall have provisions for padlocking in the latched position. Padlocks will be furnished by the Engineer.

Mounting panels shall be fabricated of stainless steel metal sheets with a minimum thickness of 0.157 inch.

Inside of the doors shall have provisions for storage of the irrigation plans.

Solid-state automatic shut-off rain sensor units shall be installed for the irrigation controller enclosure cabinets. Rain sensor units shall automatically interrupt the master remote control valves when approximately 1/8 inch of rain has fallen. The irrigation system shall automatically be enabled again when the accumulated rainfall evaporates from the rain sensor unit collection cup. Rain sensor units shall be rated 24 V (ac) to 30 V (ac). Static charge protection shall be included to protect against lightning damage.

Equipment, except for field wiring, shall be installed in the cabinet in a shop by the equipment manufacturer's representative or distributor prior to field installation.

IRRIGATION SYSTEMS FUNCTIONAL TEST

Functional tests for the remote irrigation controller system (RICS) and associated automatic irrigation systems shall conform to the provisions in Section 20-5.027J, "Testing," of the Standard Specifications and these special provisions.

Two functional tests shall be performed, one without and one with connection to the remote irrigation controller system base station. Both tests shall consist of demonstrating to the Engineer, through one complete cycle of the irrigation controllers in the automatic mode, that the associated automatic components of the irrigation systems operate properly.

The Contractor shall notify the Engineer not less than 2 weeks prior to starting the functional tests for the remote irrigation control system.

The existing remote irrigation controller system base station is located at 691 South Tustin St. Orange, CA. 92866.

Associated automatic components for both tests shall include, but not limited to, new and existing remote control valve actuator systems, irrigation controllers, remote control valves, conductors, flow sensors, and rain sensors. Associated automatic components for the second test shall include, but not be limited to, new and existing irrigation software programs, cellular phone, existing trunked radio transmission systems, and flow alarms for high, low, zero, and maximum mainline flows.

The first test shall be performed prior to planting the plants and shall consist of testing the irrigation controllers and associated automatic irrigation systems without connection to the remote irrigation controller system base station. Upon completion of a satisfactory functional test, and correction of the deficiencies, the plants to be planted in the areas watered by the irrigation system may be planted, provided the planting areas have been prepared as specified in these special provisions.

The second test shall be performed prior to the start of plant establishment and shall consist of testing the irrigation controllers (field units) and associated automatic irrigation systems with connection to the remote irrigation controller system base station. As part of the second test, a remote irrigation controller system watering schedule shall be submitted for each irrigation controller (field unit) to the Engineer. The Engineer will enter the watering schedule into the irrigation software program, and a computer printout will be made available to the Contractor for verification. If the Engineer determines the submitted watering schedule is unacceptable, a revised watering schedule shall be submitted to the Engineer for approval within 5 working days. Also as part of the second test, the Contractor shall demonstrate to the Engineer that the remote irrigation controller system base station detects and reports the high, low, zero, and maximum mainline flow alarms. Upon completion of a satisfactory test, including correction of deficiencies, the plant establishment period may begin, provided planting work as specified in these special provisions has been completed except for plant establishment work.

If existing and new automatic components of the irrigation systems, including remote irrigation controller system base station components, fail a functional test, the components shall be repaired. Repairs shall be at the Contractor's expense, except for repairs to an existing base station (personal computer, printer, mouse, keyboard, cables, and software) which will be paid for as extra work as provided in Section 4-1.03D of the Standard Specifications. Testing shall be repeated until satisfactory operation is obtained.

Repair or replacement of existing irrigation facilities due to unsatisfactory performance shall conform to the provisions in Section 20-5.025, "Maintain Existing Water Supply," of the Standard Specifications and "Existing Highway Irrigation Facilities" of these special provisions.

PIPE

Steel Pipe

Galvanized steel pipe supply lines installed between water meters and backflow preventer assemblies must be installed not less than 18 inches below finished grade, measured to the top of the pipe.

Plastic Pipe

Plastic pipe supply lines must be polyvinyl chloride (PVC) 1120 or 1220 pressure rated pipe with the minimum pressure rating (PR) shown on the plans.

Plastic pipe supply lines less than 3 inches in diameter must have solvent cemented type joints. Primers must be used on the solvent cemented type joints.

Plastic pipe supply lines (main) must have a minimum cover of 1.5 feet.

Plastic pipe (irrigation lines) must be installed on the finished grade.

A nonhardening joint compound must be used in place of the pipe thread sealant tape conforming to the provisions in Section 20-5.03E, "Pipe," of the Standard Specifications. Joint compounds must be applied in conformance with the manufacturer's recommendations.

Fittings for plastic pipe supply lines with a pressure rating (PR) of 315 must be Schedule 80.

ULTRAVIOLET RESISTANT PLASTIC PIPE

Ultraviolet resistant plastic pipe supply line shall be Schedule 40, Type I, Grade I, ultraviolet resistant polyvinyl chloride (UVR-PVC) pipe and shall conform to the requirements in ASTM Designation: D 1785.

Fittings shall be Schedule 40, ultraviolet resistant polyvinyl chloride (UVR-PVC), Type I, Grade I, conforming to the requirements in ASTM Designation: D 2466.

The pipe shall be a homogeneous and uniform color and shall be manufactured of at least 80 percent vinyl chloride resin with ultraviolet stabilizers, non-polyvinyl chloride (PVC) resin modifiers and coloring ingredients which will resist the damaging effects of ultraviolet wave lengths of solar radiation.

Solvent cement for ultraviolet resistant plastic pipe and fittings shall conform to the requirements of the local Air Quality Management District and shall be as recommended by the pipe manufacturer.

Ultraviolet resistant plastic pipe shall be secured on grade as shown on the plans.

Quantities of ultraviolet resistant plastic pipe (supply line) will be measured by the linear foot as determined from the slope length designated by the Engineer. Pipe placed in excess of the lengths designated will not be paid for.

The contract price paid per linear foot for ultraviolet resistant plastic pipe (supply line) of the sizes shown in the Engineer's Estimate shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in installing ultraviolet resistant plastic pipe (supply line), complete in place, including securing to grade, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

THRUST BLOCK

Thrust blocks shall be installed in accordance with these special provisions. Thrust blocks shall be installed on the main supply line at all changes in direction and terminus run.

BACKFLOW PREVENTER ASSEMBLIES

Backflow preventers shall conform to the provisions in Section 20-2.25, "Backflow Preventers," of the Standard Specifications and these special provisions.

Backflow preventers shall have current approval from the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (USC Foundation).

Before backflow preventer assembly installation, the Contractor shall provide the Engineer with the portion of the USC Foundation "List of Approved Backflow Prevention Assemblies" showing type of assembly, manufacturer's name, model number, edition of the manual under which the assembly was approved, approval date and the last renewal date.

The "List of Approved Backflow Prevention Assemblies" is available to Foundation Members. Membership information to join the USC Foundation is available at:

http://www.usc.edu/dept/fccchr/membership.html

Questions concerning the USC Foundation "List of Approved Backflow Prevention Assemblies" can be answered by calling the Foundation at toll free (866) 545-6340.

Pressure loss through the backflow preventers shall not exceed the following:

BACKFLOW PREVENTER SIZE (Inches)	FLOW RATE (Gallons Per Minute)	PRESSURE LOSS (PSI)
2	36	15

BACKFLOW PREVENTER ASSEMBLY ENCLOSURE

Enclosures shall be fabricated of structural steel angles and flattened expanded metal and shall be installed over backflow preventer assemblies on a portland cement concrete pad as shown on the plans and in conformance with these special provisions.

Expanded metal for sides, ends and top panels shall be fabricated from 9-gage minimum thickness, sheet steel. The flattened expanded metal openings shall be approximately 3/4-inch x 1-3/4-inch in size.

Expanded metal panels shall be attached to the 3/16-inch thick steel angle frames by a series of welds, not less than 1/4-inch in length and spaced not more than 4-inches on center, along the edges of the enclosure.

Lock-guard shall be made of a minimum thickness of 3/16-inch cold rolled steel.

Padlocks will be furnished by the Engineer.

Enclosures shall be galvanized, after fabrication, in conformance with the provisions in Section 75-1.05, "Galvanizing," of the Standard Specifications.

Hold down bolt assemblies shall be galvanized and shall be installed when the portland cement concrete pad is still plastic. Nuts shall be hexagonal and washers shall be the lock type.

Enclosures shall be painted by the manufacturer with one application of a commercial quality pre-treatment, vinyl wash primer and a minimum of one application of a commercial quality, exterior enamel for metal. The finish color shall be a tan to light brown closely matching Federal Standard No. 595B, Color No. 20450.

All parts of the backflow preventer assembly enclosure, including hold down assemblies, may be constructed of stainless steel instead of standard steel materials specified above. Stainless steel enclosures shall conform to the provisions herein except galvanizing, priming and painting shall not be required. Stainless steel enclosures shall be powder coated a tan to light brown color closely matching Federal Standard 595B, Color No. 20450, by the manufacturer.

Lock-guard for stainless steel enclosures shall be 12-gage stainless steel, Type 304.

TESTING NEW BACKFLOW PREVENTERS

New backflow preventers shall be tested for proper operation in conformance with the provisions in Section 20-5.03J, "Check and Test Backflow Preventers," of the Standard Specifications and these special provisions.

Tests for new backflow preventers shall be satisfactorily completed after installation and before operation of the irrigation systems.

New backflow preventers shall be retested one year after the satisfactory completion of the previous test, and each year thereafter until the plant establishment period is completed. An additional test shall be provided not more than 10 days prior to acceptance of the contract

SPRINKLERS

Sprinklers shall conform to the type, pattern, material, and operating characteristics listed in the "Sprinkler Schedule" shown on the plans.

Flow shutoff device on risers shall automatically and instantly stop the flow of water from a riser when the riser is broken on the downstream side of the device. The flow shutoff device shall be installed as recommended by the manufacturer of the device.

FINAL IRRIGATION SYSTEM CHECK

A final check of existing and new irrigation facilities shall be performed not more than 40 working days and not less than 30 working days prior to acceptance of the contract.

The length of watering cycles using potable water measured by water meters for the final check of irrigation facilities will be determined by the Engineer.

Remote control valves connected to existing and new irrigation controllers shall be checked for automatic performance when the controllers are in automatic mode.

Unsatisfactory performance of irrigation facilities installed or modified by the Contractor shall be repaired and rechecked at the Contractor's expense until satisfactory performance is obtained, as determined by the Engineer.

Repair or replacement of existing irrigation facilities due to unsatisfactory performance shall conform to the provisions in "Existing Highway Irrigation Facilities" of these special provisions.

Nothing in this section "Final Irrigation System Check" shall relieve the Contractor of full responsibility for making good or repairing defective work or materials found before the formal written acceptance of the entire contract by the Director.

Full compensation for checking the irrigation systems prior to the acceptance of the contract shall be considered as included in the contract lump sum price paid for plant establishment work and no additional compensation will be allowed therefor.

BID ITEM LIST

12-0H2084

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
1	074016	CONSTRUCTION SITE MANAGEMENT	LS	LUMP SUM	LUMP SUM	
2	074019	PREPARE STORM WATER POLLUTION PREVENTION PLAN	LS	LUMP SUM	LUMP SUM	
3	074028	TEMPORARY FIBER ROLL	LF	14,600		
4	074031	TEMPORARY GRAVEL BAG BERM	LF	3,790		
5	074033	TEMPORARY CONSTRUCTION ENTRANCE	EA	1		
6	074038	TEMPORARY DRAINAGE INLET PROTECTION	EA	6		
7	074041	STREET SWEEPING	LS	LUMP SUM	LUMP SUM	
8	074042	TEMPORARY CONCRETE WASHOUT (PORTABLE)	LS	LUMP SUM	LUMP SUM	
9	074051	TEMPORARY HYDRAULIC MULCH	SQFT	136,000		
10	074056	RAIN EVENT ACTION PLAN	EA	24	500.00	12,000.00
11	074057	STORM WATER ANNUAL REPORT	EA	2	2,000.00	4,000.00
12	074058	STORM WATER SAMPLING AND ANALYSIS DAY	EA	11		
13	120090	CONSTRUCTION AREA SIGNS	LS	LUMP SUM	LUMP SUM	
14	120100	TRAFFIC CONTROL SYSTEM	LS	LUMP SUM	LUMP SUM	
15	128650	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2		
16	150608	REMOVE CHAIN LINK FENCE	LF	1,331		
17	023409	PARTIAL REMOVAL BURIED SOIL NAIL WALL	SQFT	6,000		
18	150832	REMOVE RETAINING WALL (CY)	CY	275		
19	153211	REMOVE CONCRETE SIDEWALK AND DRIVEWAY	SQFT	14,000		
20	160102	CLEARING AND GRUBBING (LS)	LS	LUMP SUM	LUMP SUM	

REPLACED PER ADDENDUM NO.2 DATED OCTOBER 25, 2013

BID ITEM LIST

12-0H2084

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
21	190101	ROADWAY EXCAVATION	CY	40,000		
22	194001	DITCH EXCAVATION	CY	200		
23	200001	HIGHWAY PLANTING	LS	LUMP SUM	LUMP SUM	
24	200115	GRAVEL (MISCELLANEOUS AREAS) (SQFT)	SQFT	870		
25	202011	MULCH	CY	345		
26	203031	EROSION CONTROL (HYDROSEED) (SQFT)	SQFT	112,000		
27	204099	PLANT ESTABLISHMENT WORK	LS	LUMP SUM	LUMP SUM	
28	208000	IRRIGATION SYSTEM	LS	LUMP SUM	LUMP SUM	
29	260203	CLASS 2 AGGREGATE BASE (CY)	CY	15		
30 (F)	510502	MINOR CONCRETE (MINOR STRUCTURE)	CY	2.00		
31	641101	12" PLASTIC PIPE	LF	4		
32	023410	4" SLOTTED PLASTIC PIPE HORIZONTAL DRAIN	LF	16,100		
33	680285	4" PLASTIC PIPE UNDERDRAIN	LF	240		
34	023411	4" PLASTIC PIPE HORIZONTAL DRAIN	LF	1,080		
35	721420	CONCRETE (DITCH LINING)	CY	110		
36	731504	MINOR CONCRETE (CURB AND GUTTER)	CY	27		
37	731516	MINOR CONCRETE (DRIVEWAY)	CY	8		
38	731521	MINOR CONCRETE (SIDEWALK)	CY	150		
39 (F)	750001	MISCELLANEOUS IRON AND STEEL	LB	326		
40	023412	STEEL TUBE FENCE	LF	1,700		

REPLACED PER ADDENDUM NO.2 DATED OCTOBER 25, 2013